

(No Model.)

J. P. MALONEY.  
BRIDGE GATE.

No. 431,817.

Patented July 8, 1890.

Fig. 1.

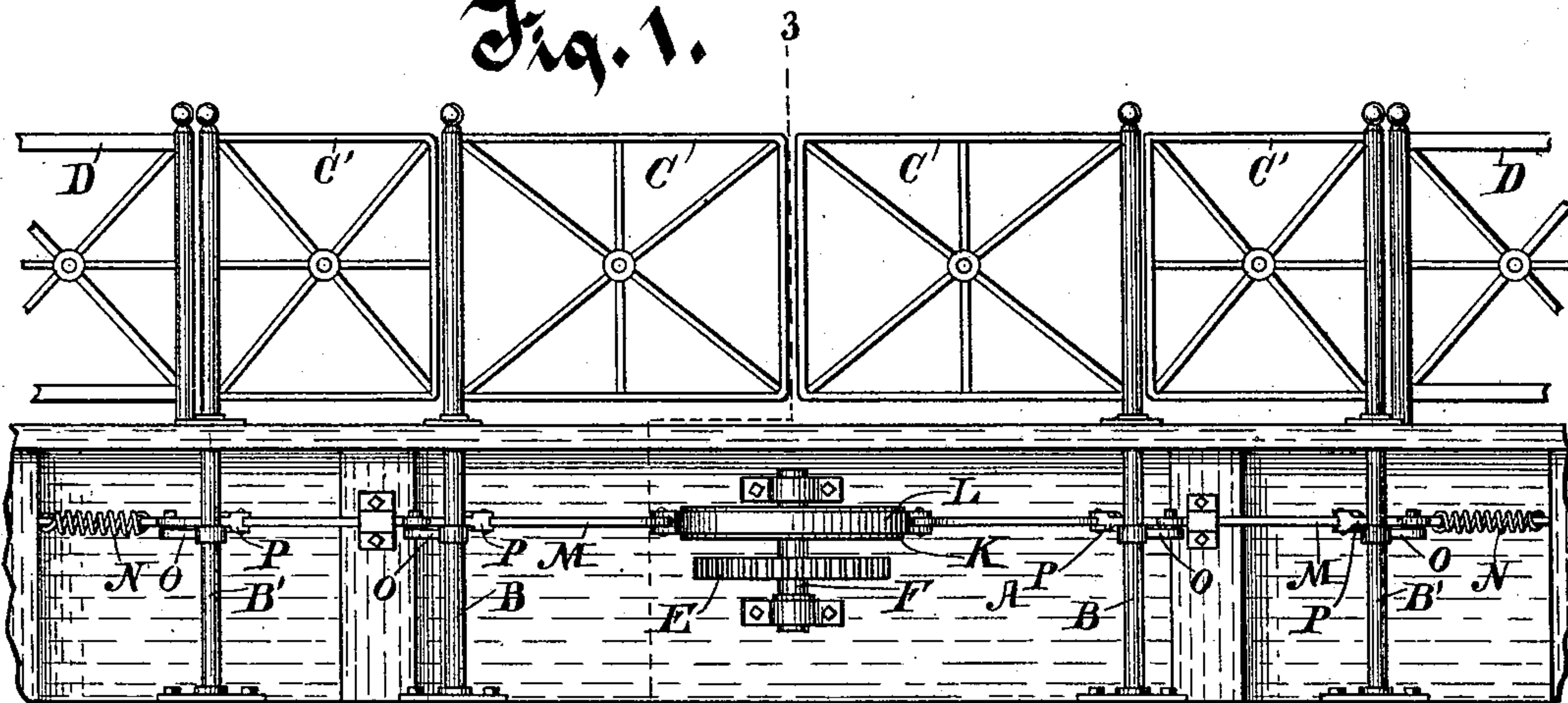


Fig. 2.

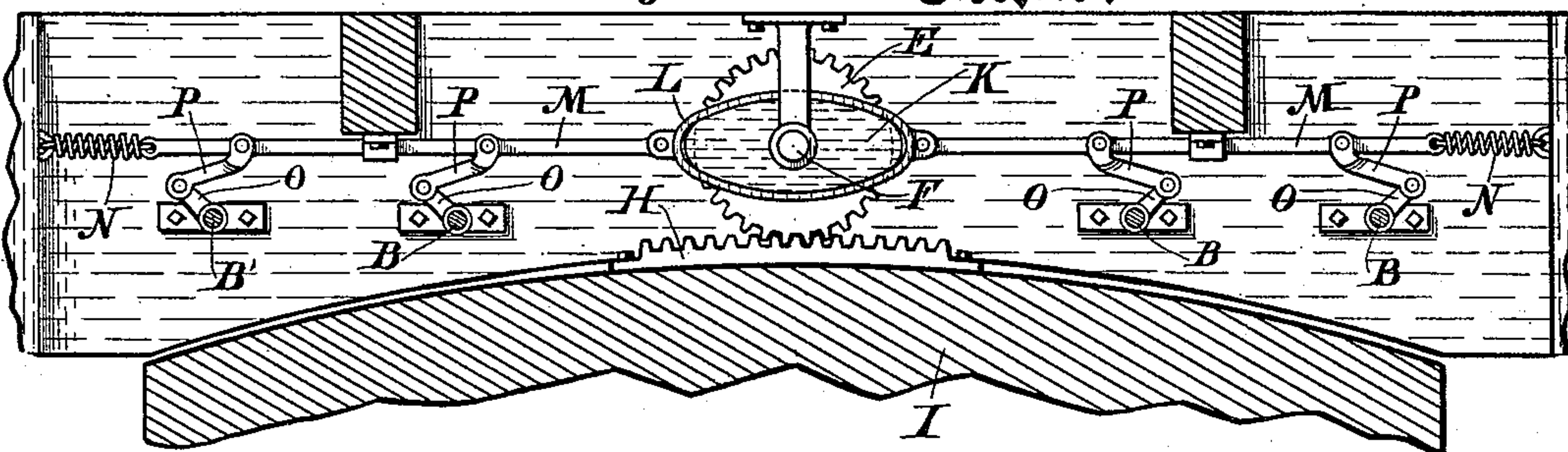
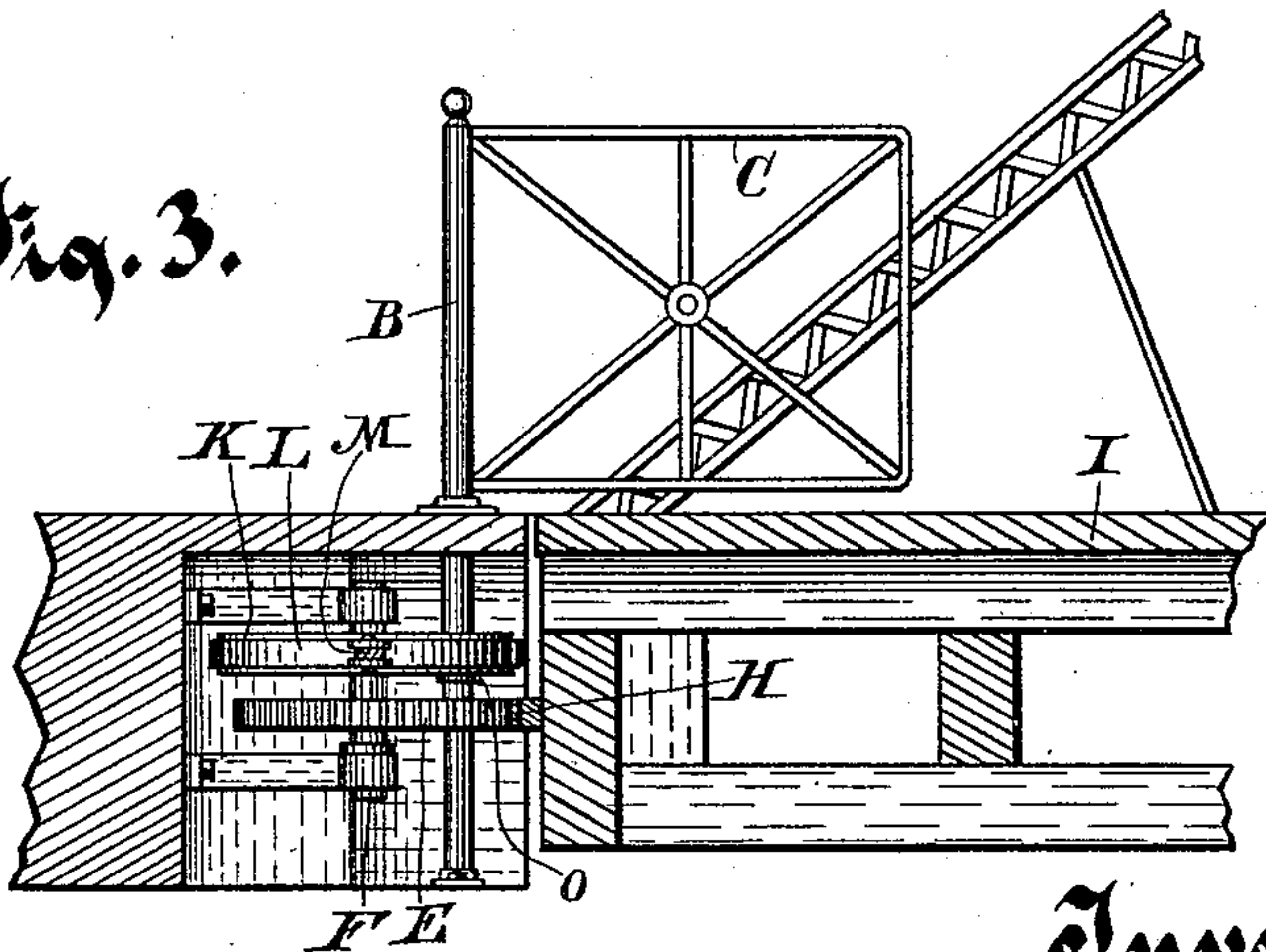


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN P. MALONEY, OF MILWAUKEE, WISCONSIN.

## BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 431,817, dated July 8, 1890.

Application filed December 23, 1889. Serial No. 334,610. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN P. MALONEY, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Bridge-Gates; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to those bridge-gates which are located at the ends of swinging bridges and are adapted to be opened and closed automatically by the swinging of the bridge, being opened when the bridge is closed and closed when the bridge is open.

In the drawings, Figure 1 is an elevation of the gates in connection with so much of the supporting and operating mechanism as is located on the pier or abutment to the bridge. Fig. 2 is a top or plan view of the mechanism for operating the gates, which is secured to the abutment, and also of so much of the bridge and the mechanism for operating the mechanism secured to the abutment as is necessary to show the working of the device. Fig. 3 is a vertical transverse section on line 3 3 of Fig. 1 of a portion of the mechanism for operating the gates and also of a part of a swinging bridge in connection with one of the gates swung open over the end of the bridge.

In the drawings, A is the abutment forming the approach to the bridge. Vertical revoluble posts B B and B' B' have their bearings in the abutment and carry thereon above the abutment the gates C C and C' C', respectively. The gates C C are adapted to swing across and close the carriage-way, and the gates C' C' are adapted to swing across and close the sidewalks alongside the carriage-way, all the gates being preferably arranged to swing open inwardly over the end of the bridge, as shown in Fig. 3. Fixed rails or guards D D extend from the gates outwardly to guard the street beyond the edge of the sidewalks.

For operating these gates a cog-wheel E, fixed on a shaft F, is so located and supported in bearings therefor secured to the abutment as to mesh with a rack H, fixed on the end of

the bridge I, so that by the swinging of the bridge the cog-wheel E is rotated limitedly. An oval disk or eccentric K is fixed on the shaft F and is provided with a groove in its periphery, in which groove is a flexible band L, fitted loosely on the oval disk in the groove in its periphery, and reciprocating shifting bars M M are secured to the band L, one at each side of the oval disk, which shifting bars slide in brackets, forming ways therefor on the abutment A. Coiled-wire springs N N—one at each end—are connected to the outer ends of the rods M M and to the abutment, whereby the movements of the shifting-bars are limited and controlled. The posts B and B' are each provided with a fixed crank-arm O, which is connected to the adjacent bar M by a connecting-rod P, which rods are jointed on the shifting bars and on the crank-arms. The rack H is located on both sides of the center line of the bridge, and has a sufficient number of teeth on each side of the line to rotate the cog-wheel E one-quarter of a revolution, so that as the bridge is swung either way the eccentric disk K will be rotated to the extent of one-quarter of a revolution, whereby the gates will be swung to a corresponding extent, and thereby thrown across the carriage-way and sidewalks, in which position they will remain until the bridge is swung back again, when the reverse rotation of the cog-wheel to the extent of a quarter of a revolution will swing the gates open again. The band L slides freely in the groove in the periphery of the oval disk K, in which it is fitted, and is thereby elongated in the direction of the shifting bars M M or at right angles thereto as the shaft F is rotated in conformity with the longer axis of the disk K.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a revoluble post having bearings in a bridge-abutment and carrying a gate and a crank-arm thereon, of an oval disk fixed on a revoluble shaft having bearings on the abutment and a flexible band riding on the periphery of the oval disk, which band is connected to the crank-arm on the post, substantially as described.

2. The combination, with a swinging bridge and a rack fixed to the end thereof, of a cog-

wheel having its shaft-bearings in an abutment to the bridge, an oval disk rigid on the shaft of the cog-wheel, and a flexible band riding in a groove in the oval disk and connected to a crank-arm on a revoluble gate-post, substantially as described.

3. The combination, with revoluble gate-posts having their bearings in a fixed support, of a rotatable oval disk, a flexible band riding in a groove about the disk, and shifting bars connected to the flexible band and by connecting-rods to crank-arms on the gate-posts, and means for rotating the oval disk, substantially as described.

15 4. The combination, with a horizontally-swinging bridge, of a gate fixed to a vertical revoluble post having its bearings in an abut-

ment to the bridge, and means, consisting of a rack on the bridge, a therewith-meshing cog-wheel supported on the abutment, and a shifting rod connected eccentrically to the cog-wheel and jointed to an arm on the revoluble post, whereby the gate is swung across the approach to the bridge when the bridge is open and is swung inwardly over the bridge when the bridge is closed, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. MALONEY.

Witnesses:

C. T. BENEDICT,  
ANNA FAUST.